CHAPTER 2

DESCRIPTION OF THE EAST FORK CLARK'S RIVER WATERSHED

2.1. BACKGROUND. The East Fork Clark's River and Watershed was named in honor of George Rogers Clark. Mr. Clark, a surveyor from Virginia, was instrumental in creating Kentucky County, VA. Capturing control of all territories north of the Ohio River, east of the Mississippi River, and west of the Appalachian Mountains from the British in the War of Independence, Clark later established a home on 37,000 acres awarded him by the Virginia legislature.

This Chapter describes the location and characteristics of the Tennessee portion of the East Fork Clark's River Watershed.

2.2. DESCRIPTION OF THE WATERSHED.

2.2.A. General Location. The East Fork Clark's River Watershed is located in West Tennessee and Kentucky. The Tennessee portion (3.2% of the watershed) includes a part of Henry County.

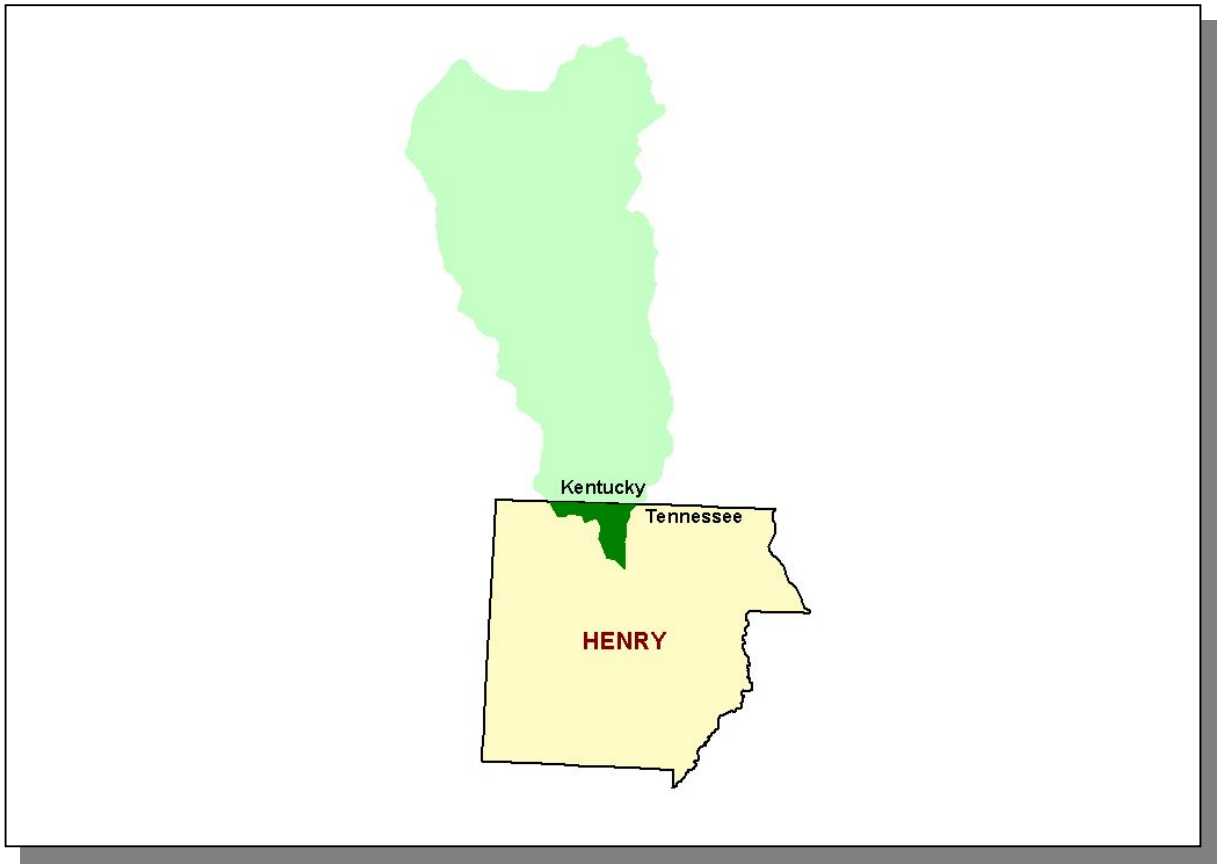

Figure 2-1. General Location of the East Fork Clark's River Watershed*. Dark green, Tennessee portion (23 square miles); light green, Kentucky portion (681 square miles). The Tennessee portion of the watershed is entirely in Henry County.*

2.2.B. Population Density Centers. One state highway serves the communities in the Tennessee portion of East Fork Clark's River Watershed.

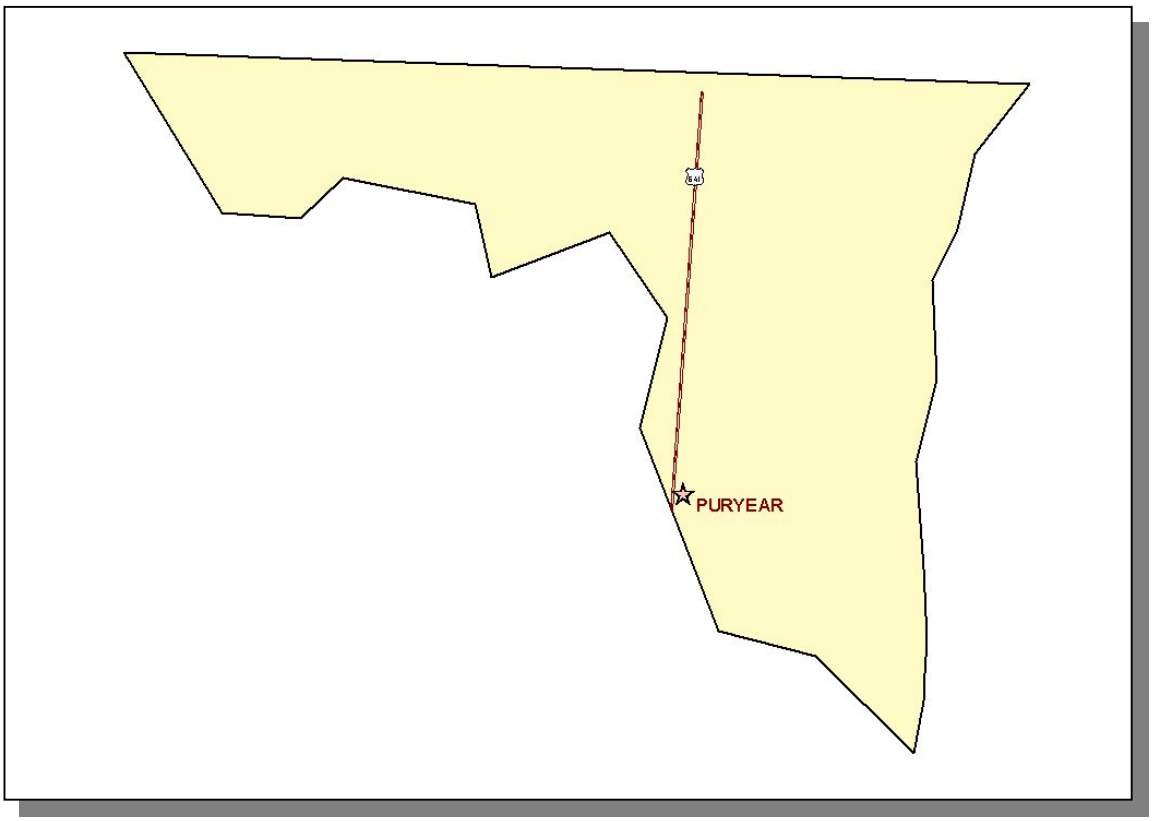

Figure 2-2. Municipalities and Roads in the Tennessee Portion of the East Fork Clark's River Watershed.

2.3. GENERAL HYDROLOGIC DESCRIPTION.

2.3.A. Hydrology. The East Fork Clark's River Watershed, designated 06040006 by the USGS, drains approximately 704 square miles, 23 square miles of which are in Tennessee, and empties to the Tennessee River in Kentucky.

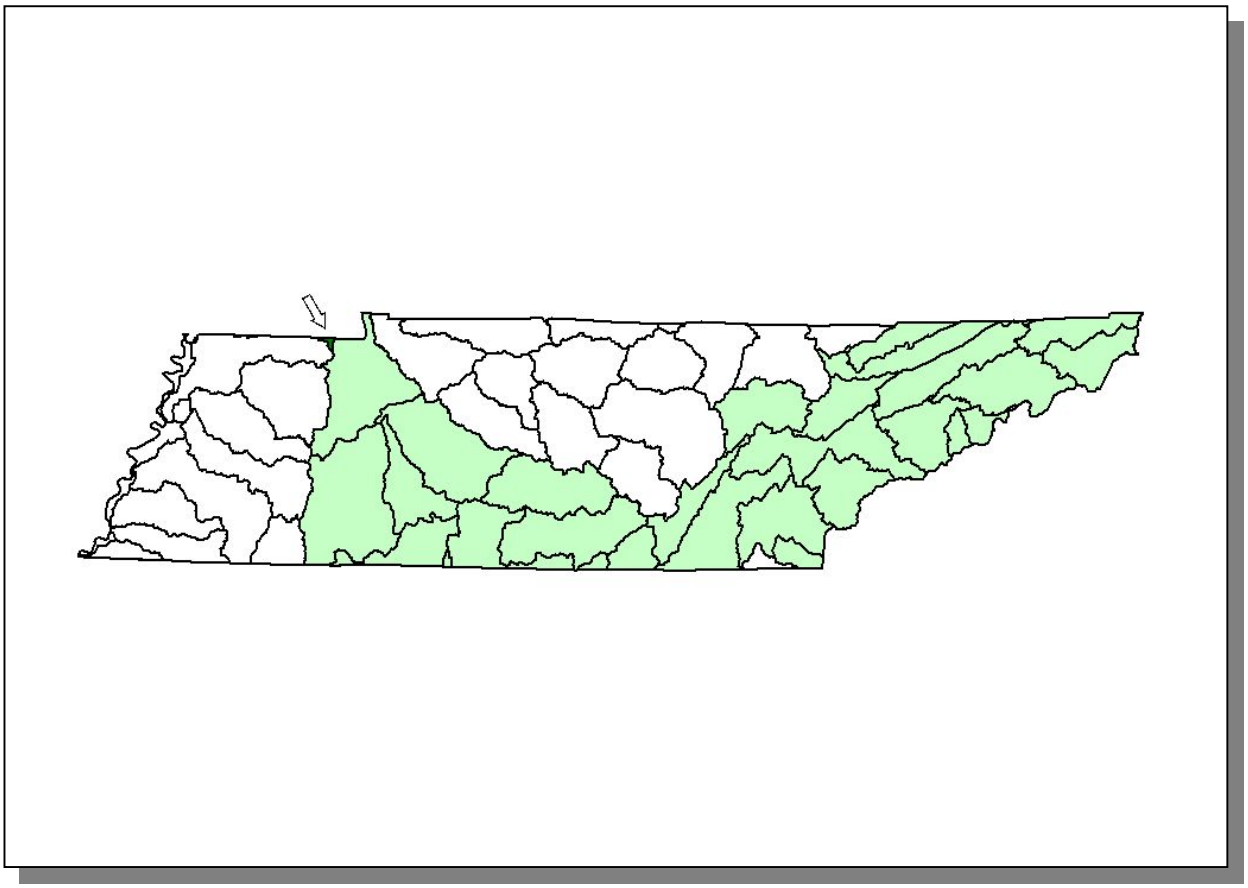

Figure 2-3. The East Fork Clark's River Watershed is Part of the Tennessee River Basin.

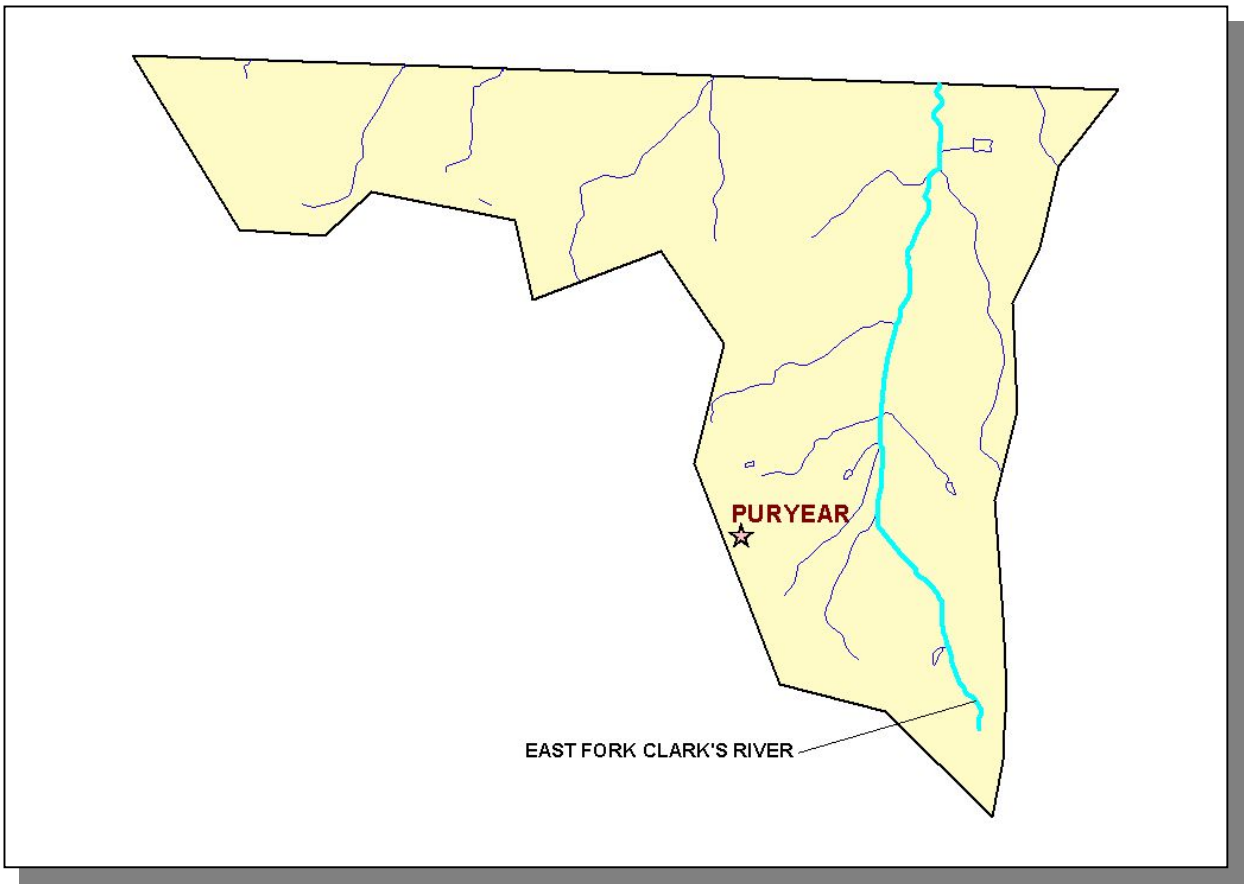

Figure 2-4. Hydrology in the Tennessee Portion of the East Fork Clark's River Watershed. *There are 25 stream miles in the Tennessee portion of the East Fork Clark's River Watershed as catalogued in the assessment database. An additional 1,146 stream miles are located in the Kentucky portion of the watershed as catalogued in the River Reach File 3 database. Location of Esat Fork Clark's River and the city of Puryear are shown for reference.*

2.4. LAND USE. Land Use/Land Cover information was provided by EPA Region 4 and was interpreted from 1992 Multi-Resolution Land Cover (MRLC) satellite imagery.

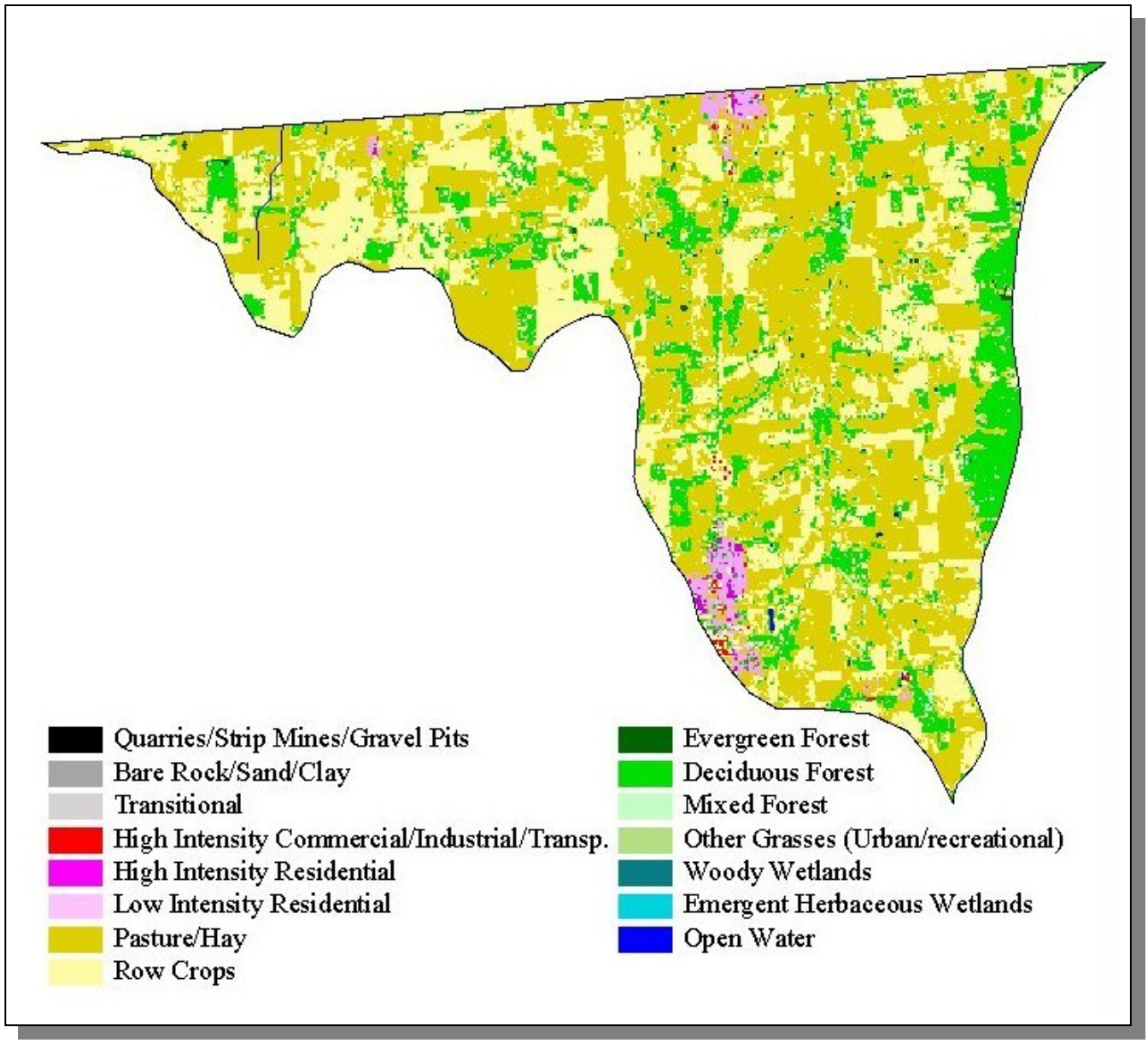

Figure 2-5. Illustration of Select Land Cover/Land Use Data from MRLC Satellite Imagery in the Tennessee Portion of the East Fork Clark's River Watershed.

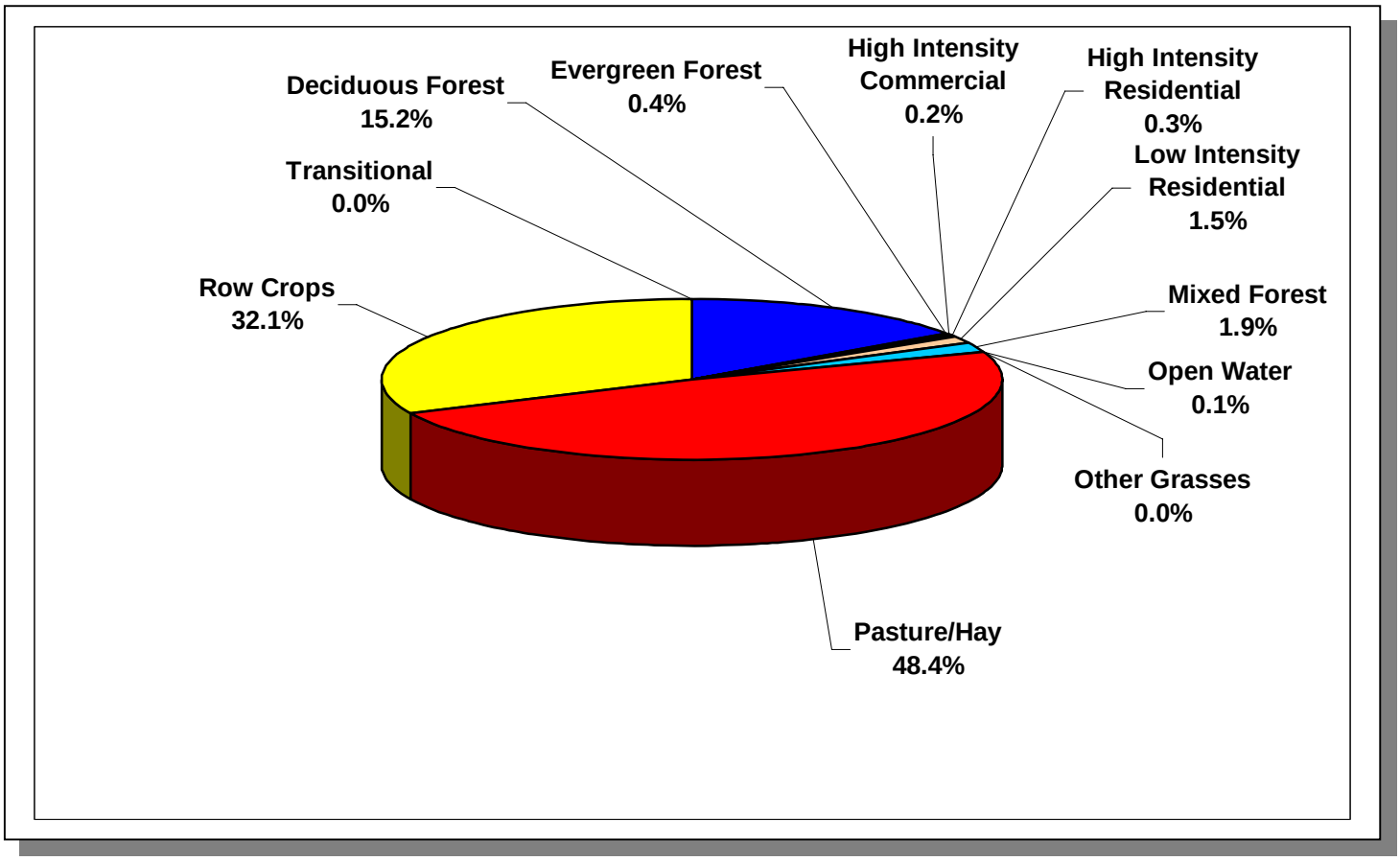

Figure 2-6. Land Use Distribution in the Tennessee Portion of the East Fork Clark's River Watershed. *More information is provided in Appendix II.*

Sinkholes, springs, disappearing streams and caves characterize karst topography. The term "karst" describes a distinctive landform that indicates dissolution of underlying soluble rocks by surface water or ground water. Although commonly associated with limestone and dolomite (carbonate rocks), other highly soluble rocks such as gypsum and rock salt can be sculpted into karst terrain. In karst areas, the ground water flows through solution-enlarged channels, bedding planes and microfractures within the rock. The characteristic landforms of karst regions are: closed depressions of various size and arrangement; disrupted surface drainage; and caves and underground drainage systems. The term "karst" is named after a famous region in the former country of Yugoslavia.

2.5. ECOREGIONS AND REFERENCE STREAMS. Ecoregions are relatively homogeneous areas of similar geography, topography, climate and soils that support similar plant and animal life. Ecoregions serve as a spatial framework for the assessment, management, and monitoring of ecosystems and ecosystem components. Ecoregion studies can aid the selection of regional stream reference sites, identifying high quality waters, and developing ecoregion-specific chemical and biological water quality criteria.

There are eight Level III Ecoregions and twenty-five Level IV subecoregions in Tennessee. The Tennessee portion of East Fork Clark's River Watershed lies within 2 Level III ecoregions (Southeastern Plains and Mississippi Valley Loess Plain) and contains 2 Level IV subecoregions:

- **Southeastern Plains and Hills (65e)** contain north-south trending bands of sand and clay formations. Tertiary-age sand, clay, and lignite are to the west, with Cretaceous fine sand, fossiliferous micaceous sand, and silty clays to the east. Elevations reach over 650 feet with more rolling topography and relief than the Loess Plains (74b) to the west. Streams have increased gradient, sandy substrates, and distinct faunal characteristics. Natural vegetation is oak-hickory forest, grading into oak-hickory-pine to the south.

- **Loess Plains (74b)** are gently rolling, irregular plains, 250-500 feet in elevation, with loess up to 50 feet thick. The region is a productive agricultural area of soybeans cotton, corn, milo, and sorghum crops, along with livestock and poultry. Soil erosion can be a problem on the steeper, upland Alfisol soils. Bottom soils are mostly silty Entisols. Oak-hickory and southern floodplain forests are the natural vegetation types, although most of the forest cover has been removed for cropland. Some less-disturbed bottomland forest and cypress-gum swamp habitats still remain. Several large river systems with wide floodplains; the Obion, Forked Deer, Hatchie, Loosahatchie, and Wolf, cross the region. Streams are low-gradient and murky with silt and sand bottoms. Most of the streams have been channelized.

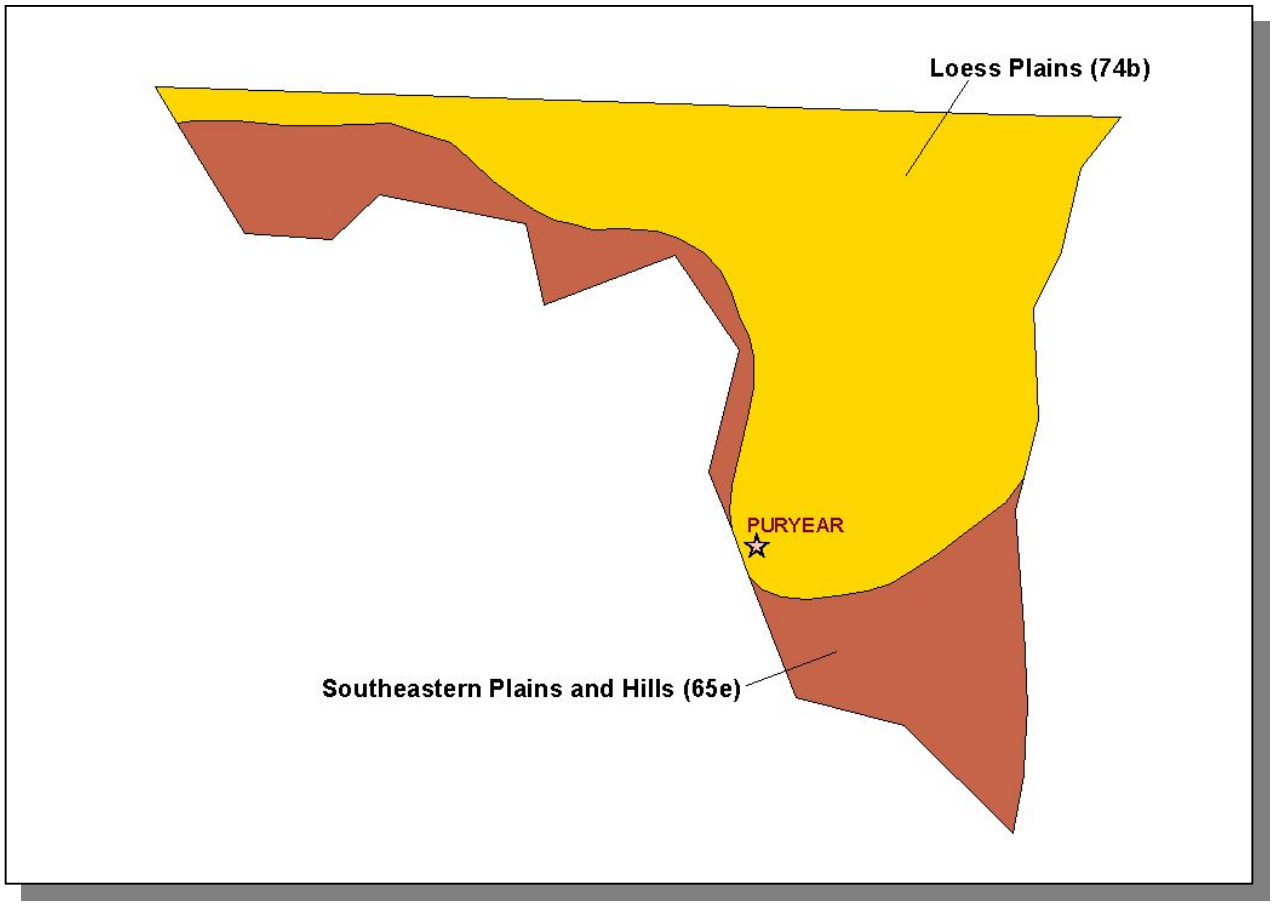

Figure 2-7. Level IV Ecoregions in the Tennessee Portion of the East Fork Clark's River Watershed. *Location of Puryear is shown for reference.*

Each Level IV Ecoregion has at least one reference stream associated with it. A reference stream represents a least impacted condition and may not be representative of a pristine condition.

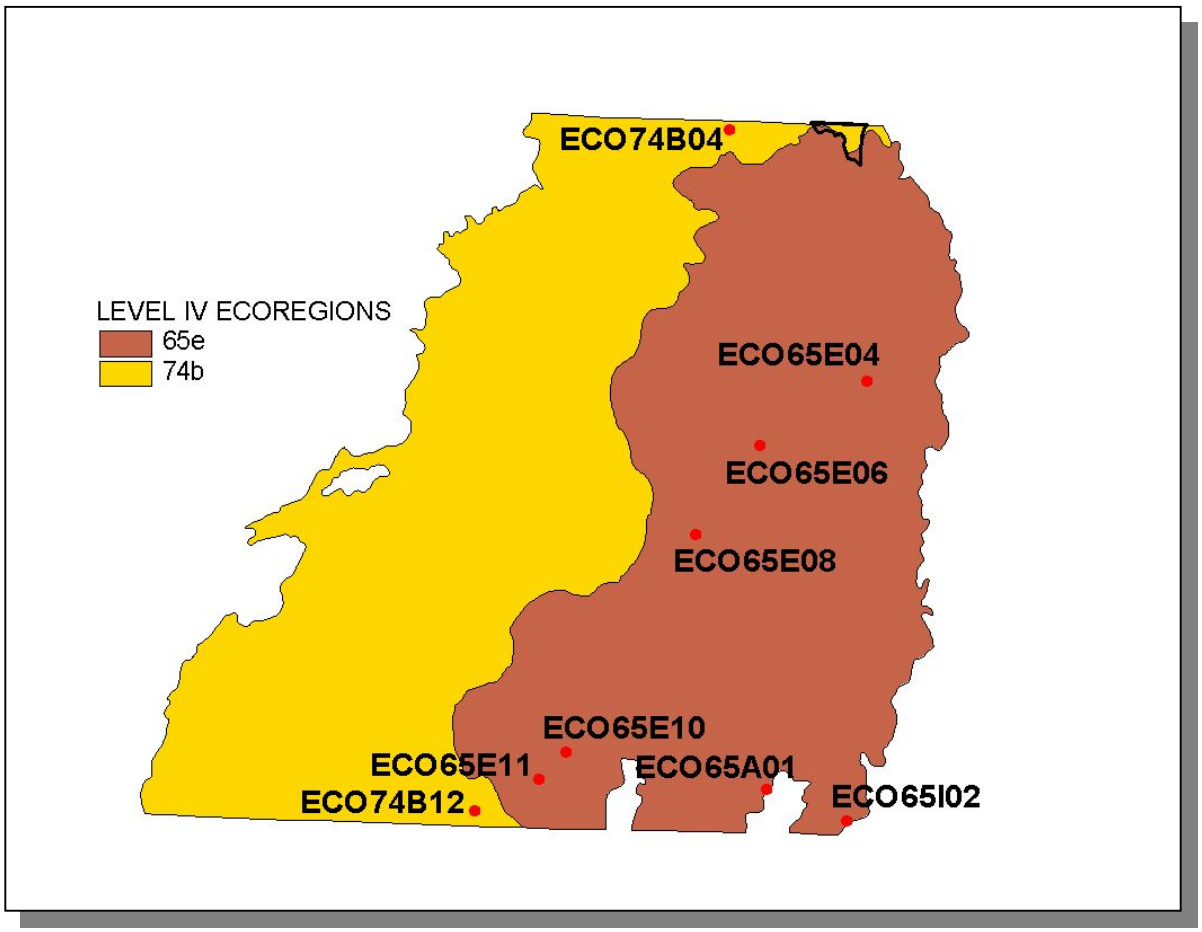

Figure 2-8. Ecoregion Monitoring Sites in Level IV Ecoregions 65e and 74b in Tennessee. *The East Fork Clark's River Watershed boundary is shown for reference. More information is provided in Appendix II.*

2.6. NATURAL RESOURCES.

2.6.A. Rare Plants and Animals. The Heritage Program in the TDEC Division of Natural Heritage maintains a database of rare species that is shared by partners at The Nature Conservancy, Tennessee Wildlife Resources Agency, the US Fish and Wildlife Service, and the Tennessee Valley Authority. The information is used to: 1) track the occurrence of rare species in order to accomplish the goals of site conservation planning and protection of biological diversity, 2) identify the need for, and status of, recovery plans, and 3) conduct environmental reviews in compliance with the federal Endangered Species Act.

GROUPING	NUMBER OF RARE SPECIES
Plants	1

Table 2-1. There is 1 Known Rare Plant Species in the Tennessee Portion of the East Fork Clark's River Watershed. *More information may be found at http://www.state.tn.us/environment/nh/data.php.*

2.7. Tennessee Rivers Assessment Project. The Tennessee Rivers Assessment is part of a national program operating under the guidance of the National Park Service's Rivers and Trails Conservation Assistance Program. The Assessment is an inventory of river resources, and should not be confused with "Assessment" as defined by the Environmental Protection Agency. A more complete description can be found in the Tennessee Rivers Assessment Summary Report, which is available from the Department of Environment and Conservation and on the web at:

http://www.state.tn.us/environment/wpc/publications/riv/

STREAM	NSQ	RB	RF
East Fork Clark's River	3		

Table 2-2. Stream Scoring from the Tennessee Rivers Assessment Project in the East Fork Clark's River Watershed.

Categories: NSQ, Natural and Scenic Qualities
RB, Recreational Boating
RF, Recreational Fishing

Scores: 1. Statewide or greater Significance; Excellent Fishery
2. Regional Significance; Good Fishery
3. Local Significance; Fair Fishery
4. Not a significant Resource; Not Assessed